



# VERSAPRINT™ 1700 SERIES UV SCREEN INK

## TECHNICAL INFORMATION AND APPLICATION INSTRUCTIONS

- SUBSTRATES** Flexible banner substrates (vinyl, polyethylene, polypropylene), pressure sensitive vinyl, corrugated plastics, styrene, static cling, cardstock and paper.
- END USES** Point-of-Purchase applications on a wide range of flexible banner plastics and rigid substrates for indoor and outdoor advertising.

### PRODUCT INFORMATION

VersaPrint™ 1700 Series UV Screen Ink has been formulated to meet the processing speeds of the most modern printing equipment reducing costs and substrate heat exposure.

The 1700 Series comes in the complete range of Nazdar colors that includes: the Pantone Matching System® Base Colors, Standard Printing Colors, Standard and High Density Halftone Colors both available in Low Tack Rheology (LTR) and Medium Tack Rheology (MTR).

The 1700 Series is a one-part, 100% solids UV-curable screen printing ink which exhibits a high gloss finish. The 1700 Series is intended to work well straight from the container on a wide range of printing equipment. The 1700 Series does not contain N-vinyl-2-pyrrolidone (trade name V-Pyrol®).

### APPLICATION INFORMATION

- MESH** 355-390 (140-150 cm) monofilament polyester mesh is recommended for most applications. 305-420 (120-165 cm) monofilament polyester mesh may be used for specialty applications.
- STENCIL** Direct emulsions and thin capillary films that are solvent resistant, UV ink compatible, and yield a thin ink deposit will work best.
- SQUEEGEE** Sharp 70-90 single durometer polyurethane blades as well as multi durometer blades that produce an even, thin ink deposit will work best.
- COVERAGE** 2,500-3,500 square feet per gallon depending upon ink deposit.
- REDUCER** RE317 Reducer may be used to reduce viscosity of the inks. Add no more than 10% by weight. It is recommended that the inks be thoroughly mixed and acclimated to the printing environment of about 65°-90°F (18°-32°C) prior to reducing.
- MIXING CLEAR** 1726 Mixing Clear is used to reduce the density of colors or as a clear base for metallic additives (see Metallic Mixing Guidelines).
- CLEAN UP** Screen Wash (Prior to Reclaim): Use IMS203 Economy Graphic Screen Wash or IMS209 Graphic All Purpose Screen Wash.  
Press Wash (On Press): Use IMS301 Premium Graphic Press Wash
- PACKAGING** All colors available in gallon containers.

## STORAGE

The inks are reactive to light and temperature. Store tightly covered at temperatures between 60°-90°F (15°-32°C). Ink taken from the press should not be returned to the original container; store separately to avoid contaminating unused ink.

## GENERAL GUIDELINES

### INK HANDLING

Direct contact with the skin is the primary route of exposure and irritation with UV inks. Therefore, it is recommended that all personnel mixing and handling these products wear gloves and barrier cream to prevent direct skin contact. Safety glasses are suggested in areas where ink may be splashed. If ink does come in contact with skin, wipe ink off with a clean, dry cloth (do not use solvent or reducer). Proceed to wash and rinse the affected area with soap and water. Consult the 1700 Material Safety Data Sheet for further instructions and warnings.

### PRINTING

The 1700 Series inks are formulated to print from the container with excellent flow characteristics. If the need arises to reduce the viscosity, add up to 10% by weight of RE317 Reducer. The use of a mixer is recommended to thoroughly mix the inks prior to printing. Inks will maintain optimum print and cure performance when the ink temperature is 65°-90°F (18°-32°C). Temperatures below 65°F (18°C) will increase the ink viscosity, impairing both flow and cure. Elevated temperatures will lower the ink viscosity, reducing print definition, film thickness and opacity. When the ink is cold, it is best to mix the ink with a high speed mixer until it returns to the proper temperature. Add reducer at this point, if desired.

Due to variations in plasticized vinyl and related flexible materials, block resistance should be thoroughly tested. Multi-purpose inks can be influenced by substrate selection, processing conditions, extreme heat and humidity; it may be required to slip sheet the 1700 Series prints when stacking ink-to-ink.

### CURE PARAMETERS

The 1700 Series halftone colors are designed to cure when exposed to a minimum of 110 mJ/cm<sup>2</sup> at a peak irradiance of 600 mW/cm<sup>2</sup> or greater. The rest of the ink line has been designed to cure when exposed to a minimum of 140 mJ/cm<sup>2</sup>, also at a peak irradiance of 600 mW/cm<sup>2</sup> or greater. These guidelines are intended only as a starting point for determining cure parameters. In order to account for differences that affect curing of the inks, cure parameters must be determined under actual production conditions. The values mentioned above are representative of measurements taken using an EIT UVICURE Plus radiometer measuring the UVA bandwidth (320-390 nm). When measuring the peak irradiance using the UVICURE Plus, it is recommended that a belt speed less than 40 feet per minute be used in order to obtain accurate readings.

The inks can be affected by stray UV light in and around a printing facility resulting in the appearance of an ink drying in the screen during the course of a long run. Be aware of skylights, windows and overhead lights possibly curing the ink in the screen. Precautions include the use of light filters that block out the damaging wavelengths.

**ADHESION TESTING**

Even when recommended UV energy output levels are achieved, it is imperative to check adhesion on a cooled down print by checking:

1. Touch of ink surface – the 1700 ink will be smooth and slick.
2. Thumb twist – the ink surface will not mar or smudge.
3. Scratch surface – the 1700 ink will resist scratching after allowing to cool. Some vinyls and cardstocks scratch easily, so use magnification to determine if scratches are ink only or ink and top layer of substrate.
4. Cross hatch tape test – use a cross hatch tool or a sharp knife to cut through ink film only; then apply 3M #600 clear tape on cut area, rub down and rip off. Ink should only come off in actual cut areas.

**PANTONE MATCHING SYSTEM® BASE COLORS**

The Pantone Matching System® Base Colors are highly concentrated versions of the base colors used to simulate the Pantone® Color Specifier 1000. These inks can be printed from the container, used in matches to achieve Pantone® color simulations, and let down with mixing clear to produce various transparent shades of color. The Pantone® Matching System Base Colors are formulated to have no white or opaque pigments. Any white needed is added as the 17358 Tinting White. This allows blended colors to be more vibrant and to better match intense, darker colors.

**STANDARD PRINTING COLORS**

The Standard Printing Colors have excellent opacity and flow characteristics.

**HALFTONE COLORS**

*Low Tack Rheology (LTR) Halftones* can achieve the fastest processing speeds on newer in-lines and cylinder presses while maintaining dot quality with very minimum dot pile.

*Medium Tack Rheology (MTR) Halftones* can achieve processing speeds for flatbed, clam shell and most in-line presses while maintaining dot quality with reduced dot pile.

*Standard Halftone Colors* are formulated with hues and densities matched to the high end of the SWOP standards in order to facilitate the matching of commercial proofing systems.

*Dense Halftone Colors* are formulated with increased densities over the Standard Halftone densities and are designed for printers that want to have the latitude to adjust the density levels of their halftone inks. These inks can be mixed into the Standard Halftone Colors to increase density without a viscosity change.

*Economy Magenta Colors* are formulated to provide a cost effective alternative to the Magenta Halftones. The Economy Magenta Colors have a limited outdoor weatherability and are more Yellow Shade compared to the durable Magenta Halftones.

*Economy Yellow Colors* are formulated to provide a cost effective alternative to the Yellow Halftones. The Economy Yellow Colors have a limited outdoor weatherability and are more Green Shade compared to the durable Yellow Halftones.

*Yellow (RS) Halftone Colors* are intended to better facilitate matching redder shades without blending Magenta into the Halftone Yellow.

*High Intensity Halftone Black* has been developed to function as a dense halftone and line color in a single pass. Due to the increased density, testing for the proper cure level should be performed and not assumed to be the same as the Standard or Dense Halftone Colors.

**METALLIC  
 COLORS**

Recommended meshes for printing metallics are 305-355 (120-140cm) plain weave monofilament polyester. Mix only enough metallic ink to be used the same day. Chemical reactions in metallic inks may result in viscosity, color and printability changes over time. When inks are to be printed over a metallic color, the overprinting ink(s) must be evaluated for intercoat adhesion over the metallic color before proceeding with the production run. To maximize intercoat adhesion over metallic colors, we recommend that the metallic be printed as late as possible in the print sequence.

*Recommended Ratios with 1726 Mixing Clear:*

Silvers (aluminum) up to 8% by weight.

Gold (bronze) up to 15% by weight.

**ADDITIVES**

To further enhance adhesion to fluted polypropylenes and some acrylics, NB80 UV Adhesion Promoter can be added to the 1700 Series up to 5% by weight. Improved adhesion will not be demonstrated for 24 hours, with full cross linking in 4-7 days. Ink mixed with NB80 will have 4 hour pot life.

CARE59 UV Satin Paste can be added to the 1700 Series to reduce gloss and improve slip. Do not exceed 20%. CARE59 should be power mixed into the 1700 Series.

**+COLOR AVAILABILITY AND WEATHERABILITY**

When the 1700 colors are at full strength and have been properly processed and cured, a projected 2 years outdoor durability can be expected with the print mounted vertically in the Central USA. An overprint of 1727 Overprint Clear can increase longevity. Exceptions: 1720 Brilliant Orange and 1700 Economy Halftones have a projected 6 months to 1 year outdoor durability. Weathering results will vary based on regional conditions.

Stock Number	Standard Printing Colors	Stock Number	LTR Standard/High Density Halftone Colors (Low Tack Rheology)
1710	Primrose Yellow	17120	Halftone Extender Base
1711	Lemon Yellow	17121	Halftone Cyan
1712	Medium Yellow	17122	Economy Halftone Magenta (ref. weatherability)
1713	Emerald Green	17123	Economy Halftone Yellow (ref. weatherability)
1719	Fire Red	17124	Halftone Black
1720	Brilliant Orange (ref. weatherability)	17127	Halftone Yellow
1726	Mixing Clear	17128	Halftone Magenta
1727	Overprint Clear	17131	Halftone Cyan Dense
1752	Super Opaque Black	17132	Economy Halftone Magenta Dense (ref. weatherability)
1767	Reflex Blue	17133	Economy Halftone Yellow Dense (ref. weatherability)
1768	Process Blue	17134	Halftone Black Dense
1775	Super Opaque White	17135	Halftone Yellow RS Dense
1778	High Intensity White	17136	High Intensity Halftone Black
1779	High Intensity Black	17137	Halftone Yellow Dense
		17138	Halftone Magenta Dense

Stock Number	Pantone Matching System® Base Colors	Stock Number	MTR Standard/High Density Halftone Colors (Medium Tack Rheology)
17358	Tinting White	17140	Halftone Extender Base
17359	Tinting Black	17141	Halftone Cyan
17360	Orange	17142	Economy Halftone Magenta (ref. weatherability)
17361	Yellow	17143	Economy Halftone Yellow (ref. weatherability)
17362	Warm Red	17144	Halftone Black
17363	Rubine Red	17147	Halftone Yellow
17364	Rhodamine Red	17148	Halftone Magenta
17365	Purple	17151	Halftone Cyan Dense
17366	Violet	17152	Economy Halftone Magenta Dense (ref. weatherability)
17367	Reflex Blue	17153	Economy Halftone Yellow Dense (ref. weatherability)
17368	Process Blue	17154	Halftone Black Dense
17369	Green	17155	Halftone Yellow RS Dense
	<b>Stock Number Additives/Reducers/Clean Up</b>	17156	High Intensity Halftone Black
RE317	Reducer	17157	Halftone Yellow Dense
CARE 59	UV Satin Paste	17158	Halftone Magenta Dense
NB80	UV Adhesion Promoter		
IMS 203	Economy Graphic Screen Wash		
IMS 209	Graphic All Purpose Wash		
IMS 301	Premium Graphic Press Wash		

*Nazdar stands behind the quality of this product. Nazdar cannot, however, guarantee the finished results because Nazdar exercises no control over individual operating conditions and production procedures. While technical information and advice on the use of this product is provided in good faith, the User bears sole responsibility for selecting the appropriate product for their end-use requirements. Users are also responsible for testing to determine that our product will perform as expected during the printed item's entire life-cycle from printing, post-print processing, and shipment to end-use. This product has been specially formulated for screen printing, and it has not been tested for application by any other method. Any liability associated with the use of this product is limited to the value of the product purchased from Nazdar.*

+Based on information from our raw material suppliers, these products are formulated to contain less than 0.06% lead. If exact heavy metal content is required, independent lab analysis is recommended.

Nazdar 8501 Hedge Lane Terrace, Shawnee, KS 66227-3290  
 Toll Free: 800.767.9942 Phone: 913.422.1888 Fax: 913.422.2296  
<http://www.nazdar.com>; e-mail: [custserv@nazdar.com](mailto:custserv@nazdar.com)